CLAIMS

What is claimed is:

1. A method of computer-based simulation of a cooling system, comprising:

inputting condenser parameters, evaporator parameters and compressor parameters for said cooling system;

processing said condenser parameters, said evaporator parameters and said compressor parameters through a model of said cooling system; and

selecting a flow control device based on an output of said model.

2. The method of claim 1 wherein said flow control device includes one of a capillary tube device and an orifice device.

3. The method of claim 1 further comprising selecting a flow control parameter including a sub-cooling temperature and a superheat temperature.

4. The method of claim 1 wherein said step of selecting a flow control device includes generating a list of available flow control devices based on said output and selecting said flow control device from said list of available flow control devices.

5. The method of claim 1 further comprising inputting properties for a refrigerant flowing through said cooling system, wherein said output is further based on said refrigerant properties.

6. The method of claim 5 wherein said properties include refrigerant charge and one of refrigerant superheat temperature and refrigerant sub-cooling temperature.

7. The method of claim 1 wherein said step of inputting condenser parameters includes generating a list of available condensers, selecting a condenser from said list of available condensers and automatically inputting said condenser parameters based on said selected condenser.

8. The method of claim 1 wherein said step of inputting compressor parameters includes generating a list of available compressors based on search parameters, selecting a compressor from said list of available compressors and automatically inputting said compressor parameters based on said selected compressor.

9. The method of claim 8 wherein said search parameters include at least one of a model number, a voltage, a phase, a frequency, a refrigerant type, an application type and a capacity.

10. The method of claim 8 wherein said search parameters include a capacity and a capacity tolerance.

11. The method of claim 1 further comprising inputting tubing and line heat transfer parameters, wherein said output is further based on said tubing and line heat transfer parameters.

12. The method of claim 1 further comprising inputting accumulator parameters, wherein said output is further based on said accumulator parameters.

13. The method of claim 1 wherein said condenser parameters and said compressor parameters are input as air-cooled condensing unit parameters.

14. The method of claim 13 further comprising generating a list of available air-cooled condensing units, selecting an air-cooled condensing unit from said list of available air-cooled condensing units and automatically inputting said air-cooled condensing unit parameters based on said selected air-cooled condensing unit.

15. A method of computer-based simulation of a cooling system, comprising:

inputting condensing unit parameters, evaporator parameters and compressor parameters for said cooling system;

processing said condensing unit parameters, said evaporator parameters and said compressor parameters through a model of said cooling system; and

generating system outputs based on said model.

16. The method of claim 15 further comprising generating a list of available condensing units, selecting a condensing unit from said list of available condensing units and automatically inputting said condensing unit parameters based on said selected condensing unit.

17. The method of claim 15 wherein said condensing unit parameters include compressor parameters and condenser parameters.

18. The method of claim 15 further comprising selecting a flow control device for said cooling system based on said system outputs.

19. The method of claim 18 wherein said flow control device includes one of a capillary tube device and an orifice device.

20. The method of claim 18 further comprising selecting a flow control parameter including a sub-cooling temperature and a superheat temperature.

21. The method of claim 18 wherein said step of selecting a flow control device includes generating a list of available flow control devices based on said system outputs and selecting said flow control device from said list of available flow control devices.

22. The method of claim 15 further comprising inputting properties for a refrigerant flowing through said cooling system, wherein said system outputs are further based on said refrigerant properties.

23. The method of claim 22 wherein said properties include refrigerant charge and one of refrigerant superheat temperature and refrigerant sub-cooling temperature.

24. The method of claim 15 further comprising inputting tubing and line heat transfer parameters, wherein said system outputs are further based on said tubing and line heat transfer parameters.

25. The method of claim 15 further comprising inputting accumulator parameters, wherein said system outputs are further based on said accumulator parameters.

26. A method of computer-based simulation of a cooling system, comprising:

inputting condenser parameters, evaporator parameters and compressor parameters for said cooling system;

calculating air properties based on a dry bulb temperature;

automatically inputting said air properties into a model of said cooling system; and

processing said condenser parameters, said evaporator parameters and said compressor parameters through said model.

27. The method of claim 26 wherein said step of calculating said air properties includes generating an air properties table based on said dry bulb temperature.

28. The method of claim 26 wherein said step of calculating said air properties includes generating an air properties graph based on said dry bulb temperature.

29. The method of claim 26 further comprising selecting a flow control device based on an output of said model.

30. The method of claim 29 wherein said flow control device includes one of a capillary tube device and an orifice device.

31. The method of claim 29 further comprising selecting a flow control parameter including a sub-cooling temperature and a superheat temperature.

32. The method of claim 29 wherein said step of selecting a flow control device includes generating a list of available flow control devices based on said output and selecting said flow control device from said list of available flow control devices.

33. The method of claim 26 further comprising inputting properties for a refrigerant flowing through said cooling system, wherein said output is further based on said refrigerant properties.

34. The method of claim 33 wherein said properties include refrigerant charge and one of refrigerant superheat temperature and refrigerant sub-cooling temperature.

35. The method of claim 26 wherein said step of inputting condenser parameters includes generating a list of available condensers, selecting a condenser from said list of available condensers and automatically inputting said condenser parameters based on said selected condenser.

36. The method of claim 26 wherein said step of inputting compressor parameters includes generating a list of available compressors based on search parameters, selecting a compressor from said list of available compressors and automatically inputting said compressor parameters based on said selected compressor.

37. The method of claim 36 wherein said search parameters include at least one of a model number, a voltage, a phase, a frequency, a refrigerant type, an application type and a capacity.

38. The method of claim 37 wherein said search parameters include a capacity and a capacity tolerance.

39. The method of claim 26 further comprising inputting tubing and line heat transfer parameters, wherein said output is further based on said tubing and line heat transfer parameters.

40. The method of claim 26 further comprising inputting accumulator parameters, wherein said output is further based on said accumulator parameters.

41. The method of claim 26 wherein said condenser parameters and said compressor parameters are input as air-cooled condensing unit parameters.

42. The method of claim 41 further comprising generating a list of available air-cooled condensing units, selecting an air-cooled condensing unit from said list of available air-cooled condensing units and automatically inputting said air-cooled condensing unit parameters based on said selected air-cooled condensing unit.